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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,467	04/15/2005	Osamu Kawai	270649US0PCT	1368

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
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ALEXANDRIA, VA 22314

EXAMINER

BERNSHTEYN, MICHAEL

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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05/12/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/531,467	Applicant(s) KAWAI ET AL.	
	Examiner MICHAEL M. BERNSHTEYN	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-14 and 20-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14 and 20-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action follows a response filed on February 9, 2009. Claims 9-14 have been amended; claims 1, 3-7, and 16-19 have been cancelled; claims 20-26 have been added.
2. In view of the amendment and remarks, the rejection of claims 1, 3-7, 9-14 and 16-19 under 35 U.S.C. 103(a) as being unpatentable over Masuda et al. (JP 2002-256128) in view of Sakamoto (U. S. Patent 5,726,268) has been withdrawn.
3. Applicant's arguments with respect to claims 1, 3-7, 9-14 and 16-19 have been considered but are moot in view of the new ground(s) of rejection.
4. Claims 9-14 and 20-26 are pending.

Claim Rejections - 35 USC § 103

5. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.
6. Claims 9-14 and 20-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirota et al. (WO 02/39153) in view of Sakamoto (U. S. Patent 5,726,268). The U.S. Patent 6,941,056 is equivalent to the WO 02/39153; therefore, the following rejection is based upon the context of U.S. Patent 6,941,056.

With regard to the limitations of claim 9, 13-14 and 20, Hirota discloses a method for producing a resin plate for light guiding plate, characterized by comprising a transparent thermoplastic resin composition containing 1-200 ppm of fine particles having a refractive index of 1.7-3.0 and an average particle diameter of 0.01-1.0 ppm,

Art Unit: 1796

which is within the claimed range (abstract). In the drawing, A indicates a light source (a cold cathode-ray tube), B indicates a lamp house, C indicates a light guiding plate containing fine particles wherein the fine particles are not drawn to scale, D indicates a light reflective sheet, E indicates a light diffusing sheet, and F indicates a prism sheet. FIG. 2 shows a flow chart of an embodiment of the method of forming the light guiding plate (col. 2, lines 43-50). As the methacrylic resins, there may be used copolymers of methyl methacrylate or ethyl methacrylate with a monomer copolymerizable therewith. The amount of methyl methacrylate or ethyl methacrylate is preferably not less than 70% by weight based on the weight of the copolymer. Examples of the monomer copolymerizable with methyl methacrylate or ethyl methacrylate are methacrylate esters such as **butyl methacrylate**, ethyl methacrylate, propyl methacrylate, cyclohexyl methacrylate phenyl methacrylate, 2-ethylhexyl methacrylate, etc.; acrylate esters such as methyl acrylate, ethyl acrylate, butyl acrylate, cyclohexyl acrylate, phenyl acrylate, 2-ethylhexyl acrylate, etc. (col. 2, line 66 through col. 3, line 14).

With regard to the limitations of claim 9, Hirota discloses that the method for producing the transparent thermoplastic resin composition has no special limitation as far as the fine particles are uniformly dispersed in the transparent thermoplastic resin. However, preferably, the fine particles are previously uniformly dispersed in an organic liquid and the transparent thermoplastic resin composition is produced using the resulting dispersion. That is, for producing the transparent thermoplastic resin composition constituting the light guiding plate, it is preferred to uniformly disperse the fine particles in the transparent thermoplastic resin by previously dispersing the fine

Art Unit: 1796

particles in an organic liquid. Furthermore, for uniformly dispersing the fine particles in the organic liquid, it is preferred to use an ultrasonic wave generating apparatus (col. 5, lines 42-55). As methods for uniformly dispersing the fine particles in the transparent thermoplastic resin in the production of the transparent thermoplastic resin composition containing the transparent thermoplastic resin and the fine particles, the following methods can be exemplified (see col. 6, line 12 through col. 7, line 14).

Hirota also discloses that the **method for molding** the light guiding plate has no special limitation, and there may be employed known methods, for example, (1) a method of molding the transparent thermoplastic resin composition to a sheet by a sheet molding extruder or a press molding machine, cutting the resulting sheet to a desired size, and subjecting the cut surface to abrasive working, (2) a method of molding the transparent thermoplastic resin composition by an injection molding machine having a mold, and (3) a method of dispersing the fine particles in a syrup containing a starting monomer for the transparent thermoplastic resin or a partial polymer, then polymerizing the monomer or the partial polymer by a casting method to obtain a sheet-like molded article, then cutting it to a desired size, and subjecting the cut surface to abrasive working. In case the light guiding plate is obtained by molding the transparent thermoplastic resin composition by a sheet molding extruder, a press molding machine, an injection molding machine having a mold, etc., from operational and economical view points, there may be employed a method including the steps of preparing a master batch pellet which has a higher concentration of the fine particles in the thermoplastic resin composition than the desired concentration and diluting to the

Art Unit: 1796

desired concentration with transparent thermoplastic resin at the time of molding (col. 7, line 64 through col. 8, line 21).

Hirota discloses that as the back-lighting systems, there are generally used two systems of so-called direct-light type in which the light guiding plate is interposed between a light source and a liquid crystal unit, and edge-light type in which a light source is provided at the side edge portions of the light guiding plate, and at present the edge-light type is mainly employed. Especially, with recent strong demands for high luminance display devices, large-sized display devices and thin display devices, luminous devices have been developed under the conception of making lighter, larger and thinner devices, and, among them, high luminance face luminous devices of edge-light type are especially desired (col. 1, lines 25-37).

With regard to the limitations of claim 9, Hirota does not disclose the usage of ethyleneglycol di(meth)acrylate in the amount of from 0.15 to 2 parts per 100 parts by weight of the polymerizable material.

Sakamoto discloses that examples of the polyfunctional monomer include: esters of ethylene glycol and of oligomers of ethylene glycol having two or more hydroxyl groups esterified by acrylic acid or methacrylic acid, such as ethylene glycol di(meth)acrylate, diethylene glycol di(meth)acrylate, triethylene glycol di(meth)acrylate, neopentyl glycol methacrylate, etc. The content of the polyfunctional monomer is generally from 0.02 to 0.3%, which is partly within the claimed range (col. 4, lines 20-43).

Art Unit: 1796

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate ethylene glycol di(meth)acrylate in the adjusted amount, as taught by Sakamoto in Hirota's thermoplastic resin composition for the light guiding plate because the monomer which forms the polyfunctional structural unit may act as the polyfunctional chain transfer agent (US'268, col. 4, lines 52-56), and thus to arrive at the subject matter of instant claim 9.

With regard to the limitations of claim 9, 21-22 and 25-26, Hirota does not disclose the content of the monofunctional acrylate in the polymerizable material.

Sakamoto discloses that examples of copolymerizable, monofunctional unsaturated monomer which forms the monofunctional unsaturated monomer unit include: methacrylates, such as ethyl methacrylate, propyl methacrylate, butyl methacrylate, and benzyl methacrylate; acrylates, such as methyl acrylate, ethyl acrylate, propyl acrylate, butyl acrylate, 2-ethylhexyl acrylate, etc. (col. 2, lines 45-67). Furthermore, Sakamoto exemplifies that the content of the monofunctional acrylate is within the claimed range (example 1, col. 7, line 64 through col. 8, line 9): the polymerizable material contains, by weight: 96 parts of methyl methacrylate, 4 parts of methyl acrylate, 0.03 parts of ethylene glycol dimethylacrylate, 0.3 parts of lauroyl peroxide, 0.14 parts of n-dodecylmercaptan, 1 part of polysodium methacrylate, and 200 parts of ion-exchanged water; total amount is 301.44, and thus 4 parts of butyl acrylate is 1.33 parts per 100 parts by weight of the polymerizable material, which is clearly within the claimed range as per claims 9, 21-22 and 25-26.

Art Unit: 1796

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the content of the monofunctional acrylate in the polymerizable material in the claimed range, as taught by Sakamoto in Hirota's thermoplastic resin composition in order to provide an improved methacrylate resin having a high melt flow property under high shear rate condition, which determines the extrusion properties or injection molding properties, while maintaining a normal level for reduced viscosity used as a general index of molecular weight. The methacrylate resin further possesses preferable melt tension as well as having excellent heat resistance, chemical resistance, and mechanical properties, which seem to compete with the melt flow property (US'268, col. 1, lines 58-67), and thus to arrive at the subject matter of instant claim 1, 21-22 and 25-26.

With regard to the limitations of claims 9, 23 and 24 concerning a light incidence plane, Hirota discloses that edge-light type in which a light source is provided at the side edge portions of the light guiding plate, and at present the edge-light type is mainly employed. Especially, with recent strong demands for high luminance display devices, large-sized display devices and thin display devices, luminous devices have been developed under the conception of making lighter, larger and thinner devices, and, among them, high luminance face luminous devices of edge-light type are especially desired (col. 1, lines 28-37).

With regard to the limitations of claims 10 and 11, Hirota discloses that the fine particles have no special limitations, and examples thereof are aluminum trioxide, titanium dioxide, etc. (col. 5, lines 29-33).

With regard to the limitations of claim 12, Hirota discloses that as the transparent thermoplastic resin contained in the transparent thermoplastic resin composition, mention may be made of methacrylic resins, polycarbonate resins, styrene resins, cyclic olefin resins, amorphous polyesters, etc. Preferred are methacrylic resins, polycarbonate resins and cyclic olefin resins, and more preferred are **methacrylic resins** (col. 2, lines 59-65).

Response to Arguments

7. Applicant's arguments filed on February 9, 2009 have been fully considered but they are not persuasive.

8. In response to applicants arguments that Hirota and Sakamoto neither teach nor suggests that ethyleneglycol dimethacrylate must be present in an amount of 0.15-2% in the claimed composition (page 8, the last paragraph, page 10), and that Sakamoto neither teaches nor suggests that monofunctional acrylate must be present in an amount less than or equal to 5% (page 9, 3rd paragraph), please, see paragraph 6 of current Office action.

9. In response to applicants arguments that Sakamoto relates to extrusion or injection molding, and in such moldings, the employed resins must have a high melt flow property (pages 8-10), it is noted the following.

The rejection was made under 35 USC 103(a), not 102(b), and Sakamoto's reference was used only as the second reference; thus it should not cover all limitations of the claimed invention. It is further noted that "The motivation in the prior art to

Art Unit: 1796

combine references does not have to be identical to that of the applicant to establish obviousness, i.e. it is not required for a finding of obviousness that motivation of the skilled artisan be the same as an applicant motivation”, *In re Kemps*, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1312 (Fed. Cir. 1996) (holding there is sufficient motivation to combine teachings of prior art to achieve claimed invention where one reference specifically refers to the other).

Therefore, it is well settled that for a finding of obviousness under § 103 the prior art need not disclose the same motivation as disclosed by an applicant.

10. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1796

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL M. BERNSHTEYN whose telephone number is (571)272-2411. The examiner can normally be reached on M-Th 8-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael M. Bernshteyn/
Examiner, Art Unit 1796

/M. M. B./

Examiner, Art Unit 1796

Application/Control Number: 10/531,467

Page 11

Art Unit: 1796

/David Wu/

Supervisory Patent Examiner, Art Unit 1796